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ABSTRACT

The graphs in this pamphlet illustrate the decline of the incidence of tooth decay in the nation's schoolchildren. The report, based on a study of more than 40,000 children, found that students have 36 percent less tooth decay than they did in the beginning of 1980. Appended to the graphs is a National Institutes of Health press release which describes the findings of the nationwide survey and gives some background to the graphs. (JD)

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Caries Prevalence in U.S. Schoolchildren 1986-87

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HHS NEWS

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

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NATIONAL INSTITUTES OF HEALTH
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Half of the schoolchildren in the United States have no tooth decay, according to the results of a new Department of Health and Human Services survey.

"This is remarkable, especially when you consider that almost all of their parents suffered from tooth decay as children," said Dr. Harald Löe, director of the National Institute of Dental Research.

The evidence that one out of two youngsters is caries free comes from a nationwide survey of almost 40,000 children conducted by the NIDR during the 1986-87 school year. Institute epidemiologists compared the survey's results to those of a 1979-80 survey.

American children have 36 percent less dental caries than they did at the beginning of the 1980s, they found. That decline follows a similar drop in the prevalence of tooth decay during the 1970s.

"What we're seeing is the beginning of the end for a disease that has plagued mankind throughout history," said Dr. Löe.

In both the 1980 and 1987 surveys, NIDR-trained dentists performed oral examinations on children aged 5 to 17 at schools located throughout the continental United States. The sample populations were selected to represent the approximately 43 million schoolchildren in the country.

(more)

The new survey shows that 49.9 percent of all children have no decay in their permanent teeth. In 1980, 36.6 percent of U.S. schoolchildren were caries free. An estimated 28 percent had no tooth decay in the early 1970s.

Not only are fewer children getting cavities today, but those who do are getting fewer of them. In 1980, children had an average of almost five decayed, missing or filled surfaces on their permanent teeth (out of 128 possible surfaces in youngsters with a full set of permanent teeth). In 1987, they had an average of only three decayed, missing or filled tooth surfaces. The average number of decayed or filled surfaces on the baby teeth of 5- to 9-year-olds also dropped from more than five in 1980 to fewer than four in 1987.

The NIDR survey did not address the question of what is causing the decline in dental caries, but institute officials say they believe the widespread use of fluoride--in community water supplies, toothpastes and other forms--is mainly responsible.

Decay on the smooth surfaces of teeth--the surfaces that benefit most from fluoride--is disappearing, the survey results show. Today, two-thirds of caries is found on the occlusal, or chewing, surfaces of teeth. Decay on these rough tooth surfaces could be eliminated, NIDR officials say, by the combined use of fluorides and adhesive sealants--plastic films painted onto teeth to seal out decay.

Interproximal caries, or decay on the surfaces between adjoining teeth, is approaching eradication, the survey results show. The prevalence of interproximal caries dropped 54 percent between 1980 and 1987, while the prevalence of decay on the chewing surfaces and the exposed smooth surfaces of teeth dropped 32 percent.

(more)

The new survey results suggest that the level of dental care has improved somewhat since 1980. Today, 82 percent of decayed, missing or filled tooth surfaces (DMFS) are filled, about 13 percent are decayed, and 4 percent are missing. In 1980, only 76 percent of DMFS were filled, 17 percent were decayed and 7 percent were missing.

Children in the Northeast and Pacific Coast regions of the country continue to have the highest prevalence of tooth decay, while youngsters in the Southwest have the least caries, the survey showed. Females have slightly more decay than do males--a pattern also seen in earlier surveys.

With the new survey results in hand, NIDR now has reliable data on the oral health of some 150 million Americans aged 5 to 85-plus. Two years ago, the institute conducted a national survey of oral health in adults. The overall picture from the survey was one of continuing improvement in the oral health status of Americans. Toothlessness has been almost eliminated in middle-aged adults, the survey showed, and tooth decay is on the decline, at least in adults under age 35.

NIDR is one of HHS' National Institutes of Health. The dental institute will celebrate its 40th anniversary on June 24.

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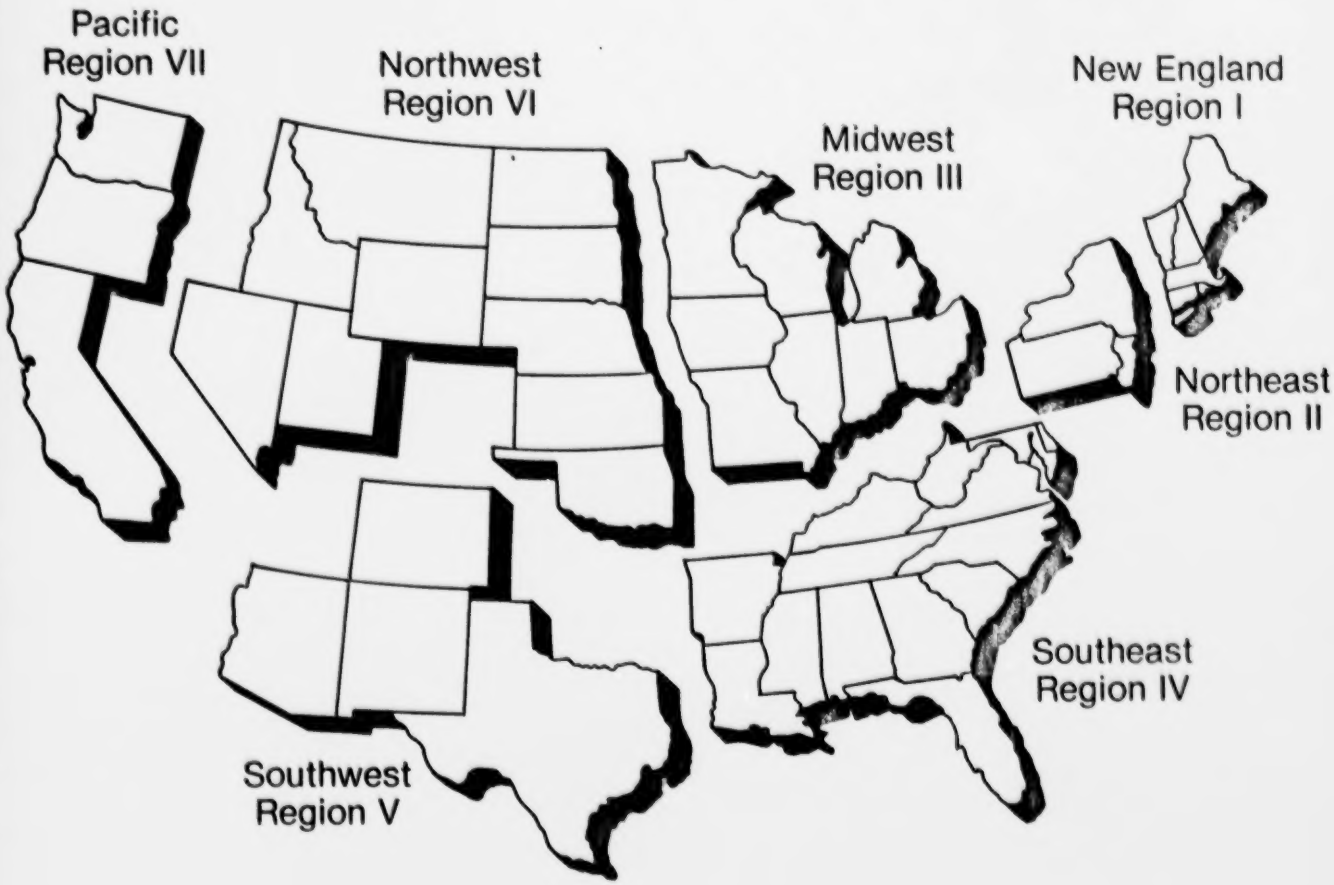
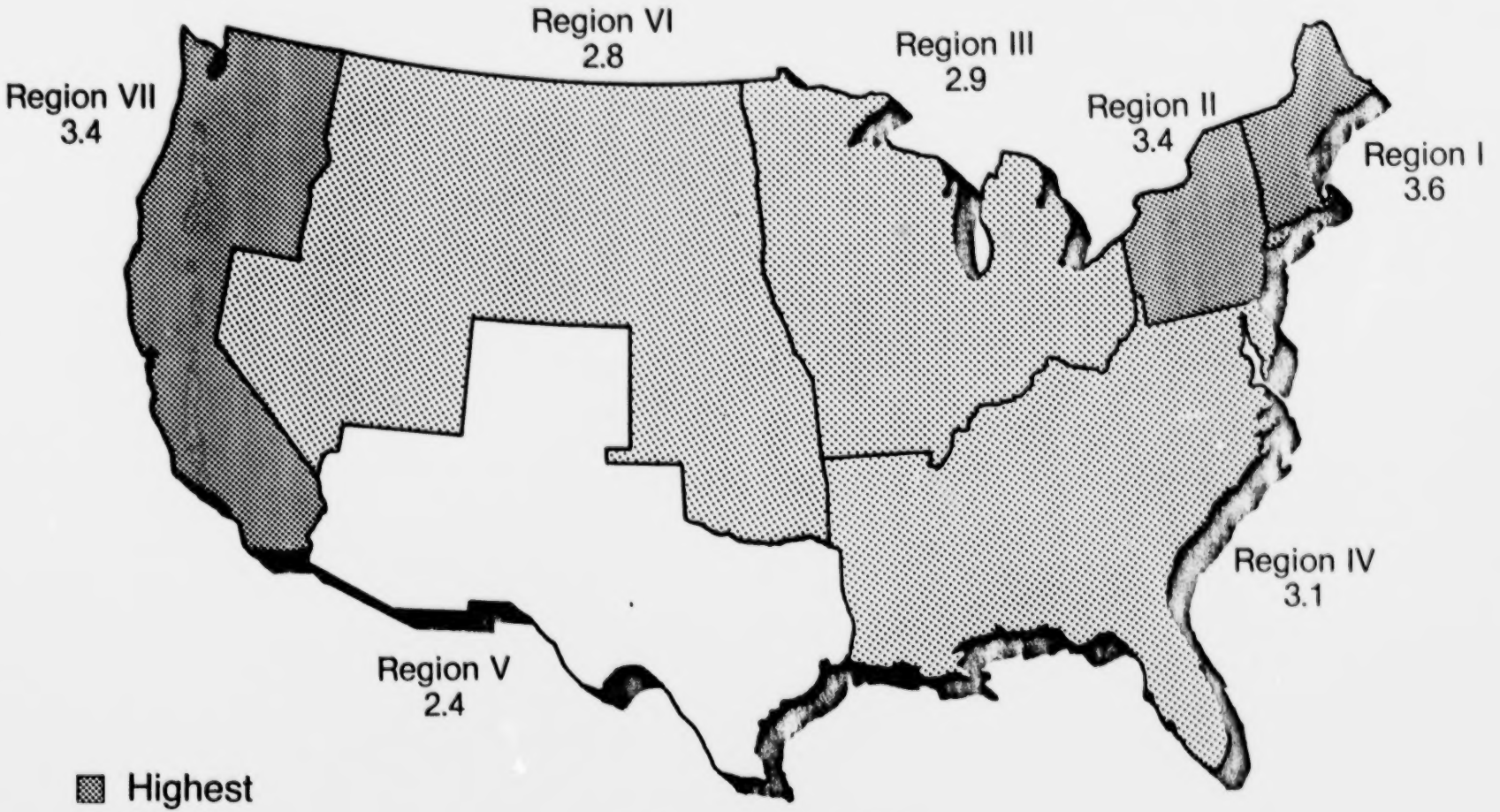
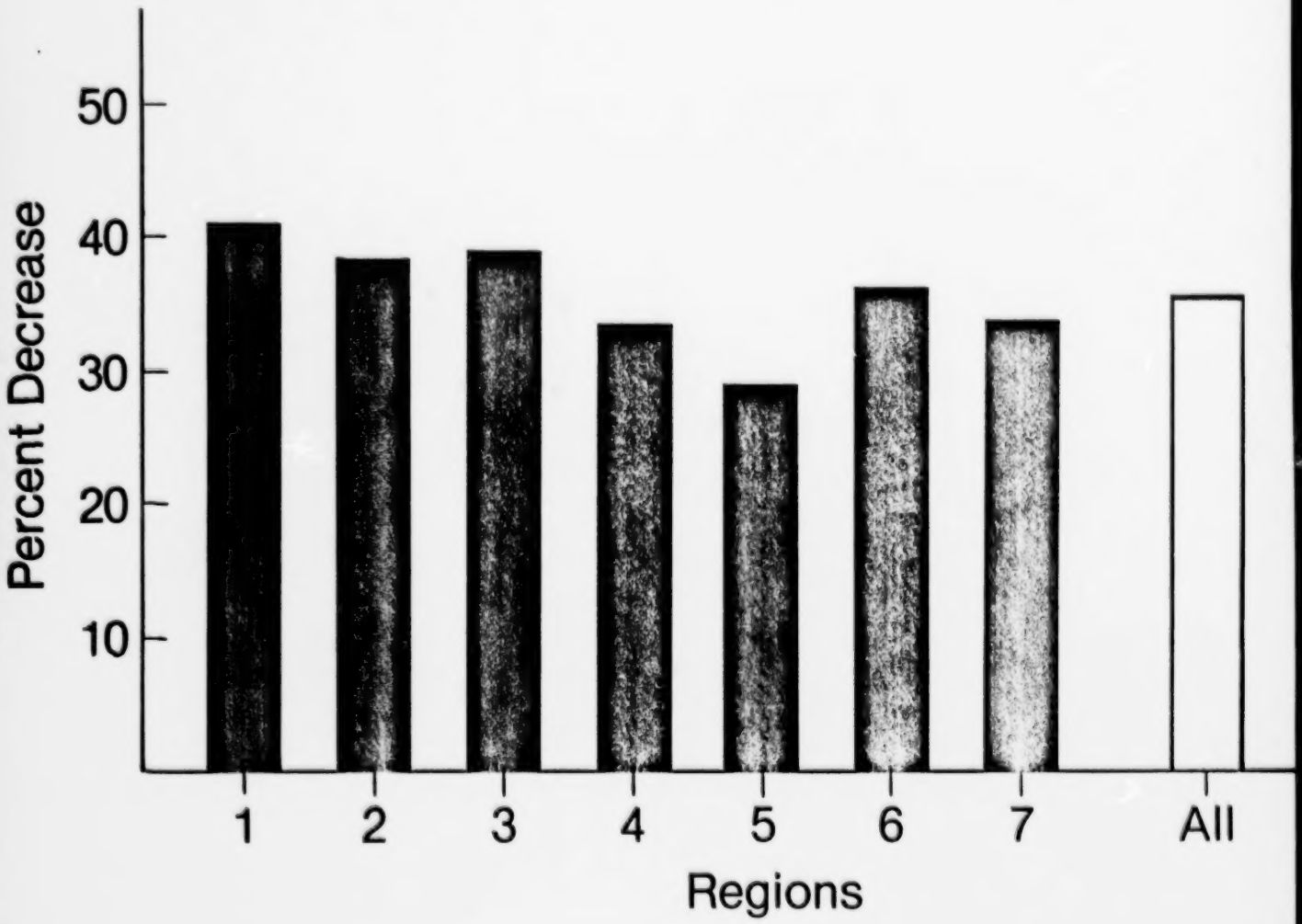
Geographic Regions of the United States



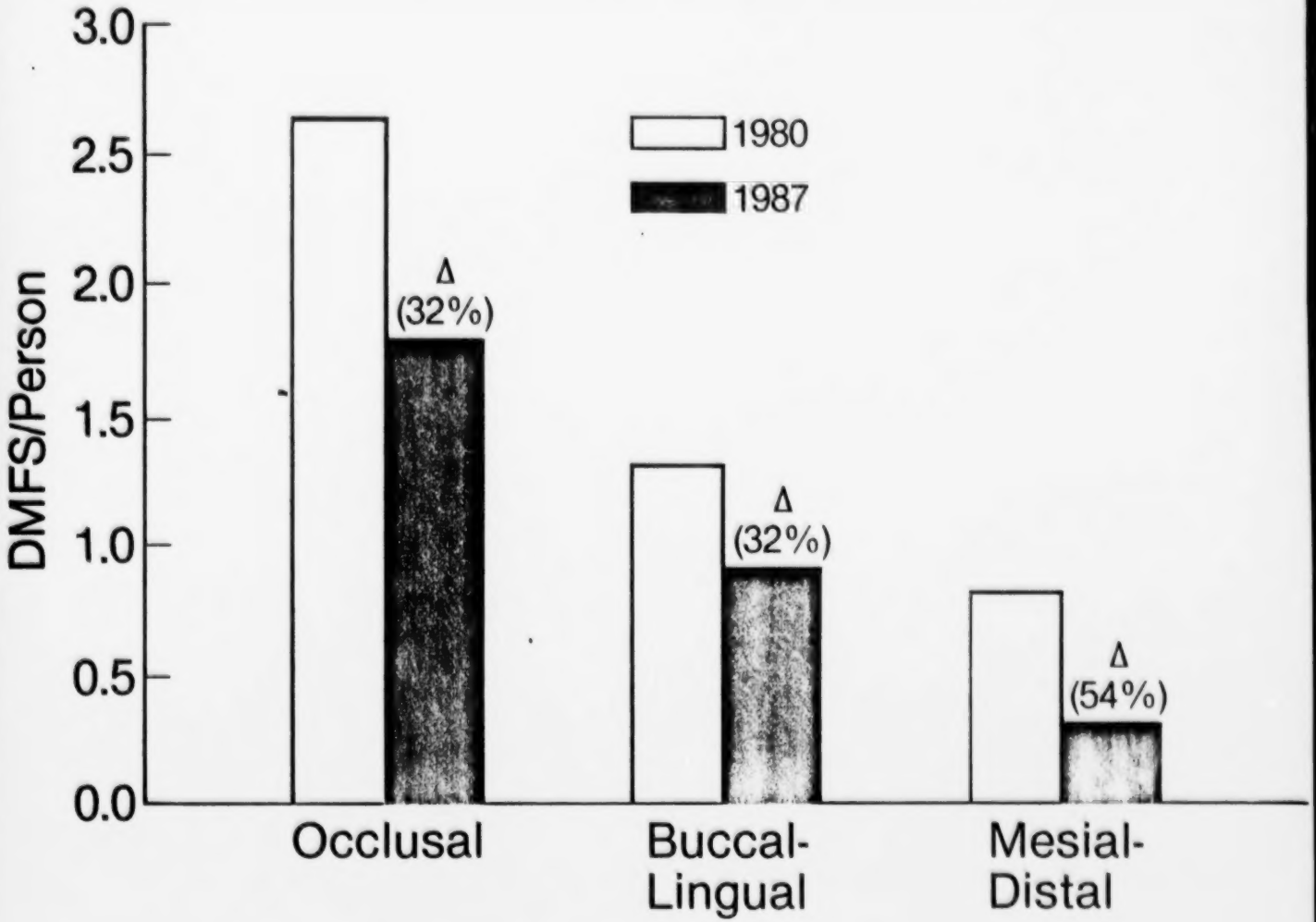
Mean DMFS for United States Children by Geographic Region, 1986-87



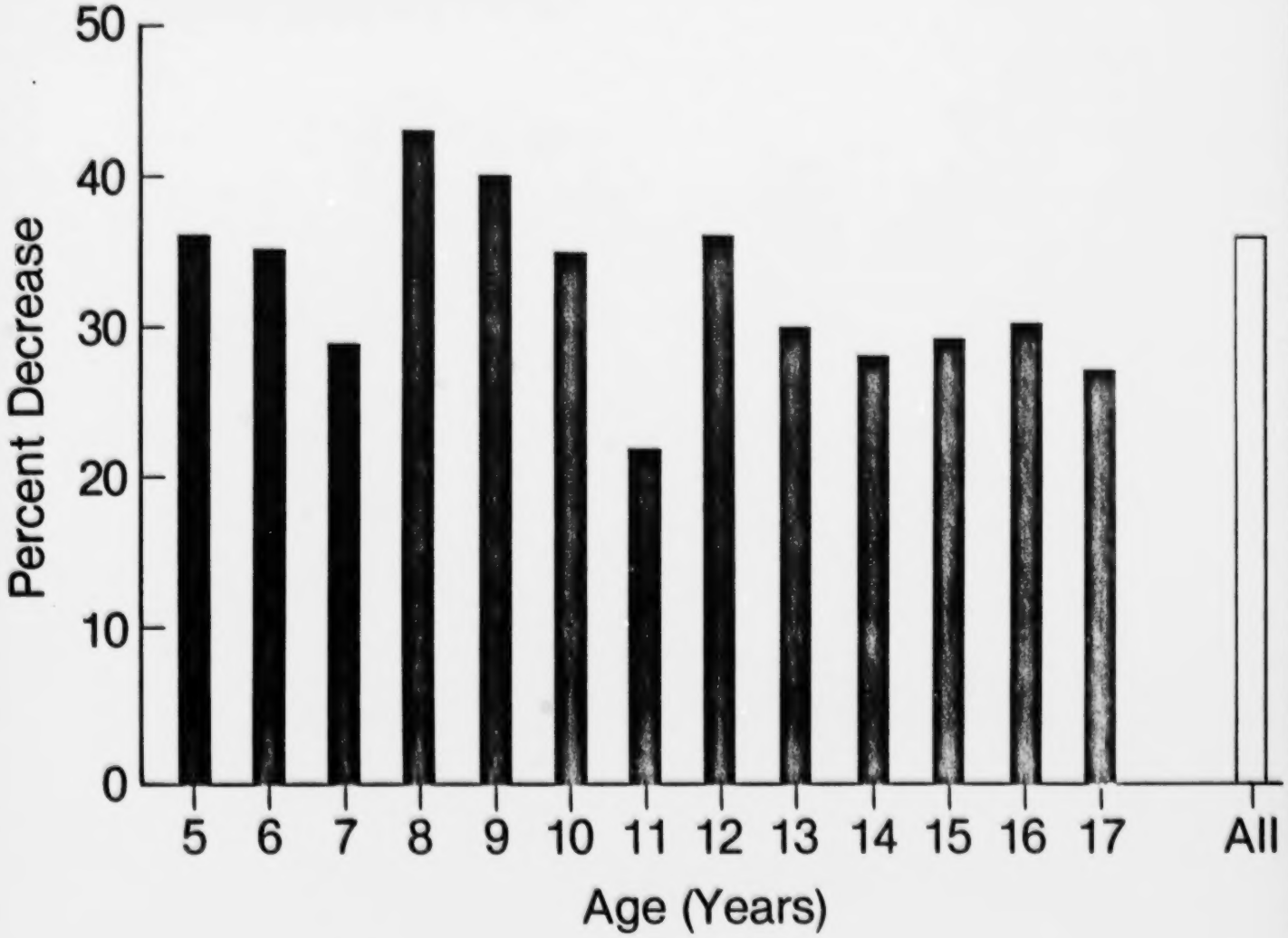
Percent Decrease in Caries Prevalence by Region, 1980-1987



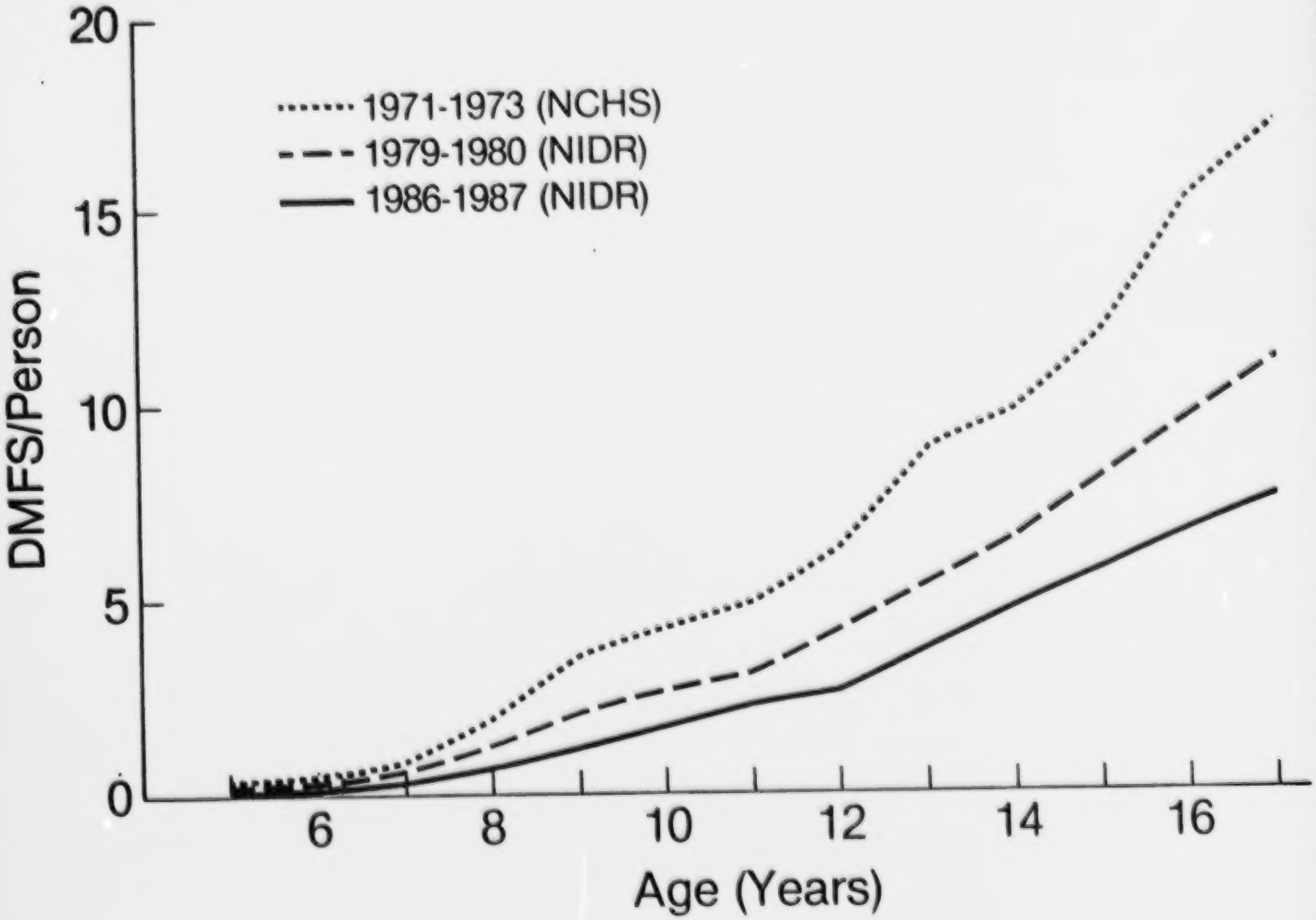
Prevalence of Dental Caries (DMFS) by Surface Type, 1980 vs 1987



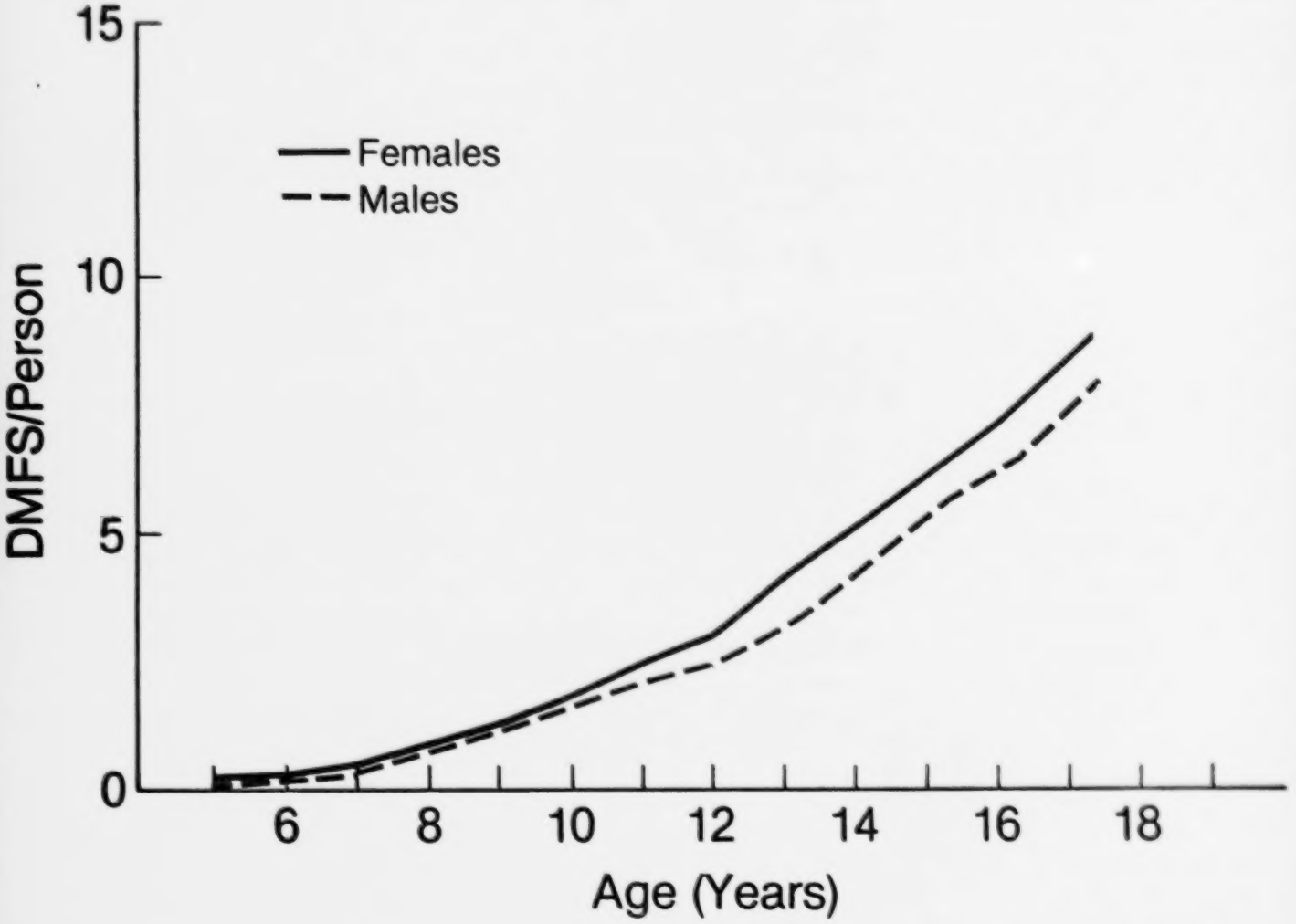
Percent Decrease in Caries Prevalence by Age, 1980-1987



Age-Specific Prevalence of Dental Caries (DMFS) in 3 National Surveys



Prevalence of Dental Caries by Age & Sex, 1986-87



Age-Specific Prevalence of Caries in Deciduous Teeth, 1979-80 and 1986-87

Age	Mean dfs 1979-80	1986-87
5	4.03	3.40
6	4.76	3.73
7	5.52	4.20
8	6.11	4.24
9	5.95	3.89
TOTAL	**5.31**	**3.91**

Age-Specific Prevalence of Caries in Permanent Teeth, 1979-80 and 1986-87

Age	Mean DMFS	
	1979-80	1986-87
5	0.11	0.07
6	0.20	0.13
7	0.58	0.41
8	1.25	0.71
9	1.90	1.14
10	2.60	1.69
11	3.00	2.33
12	4.18	2.66
13	5.41	3.76
14	6.53	4.68
15	8.07	5.71
16	9.58	6.68
17	11.04	8.04
Total	**4.77**	**3.07**

Percent of DMFS Due to Decayed, Missing, and Filled Surfaces, 1979-80 and 1986-87

	1979-80	1986-87
Decayed	16.8	13.4
Filled	76.1	82.3
Missing	7.1	4.3

Percent of Children Caries-Free in Two National Surveys

Age	1979-80	1986-87
5	95.4	97.3
6	89.7	94.4
7	76.5	84.2
8	58.6	75.0
9	50.6	65.5
10	37.9	55.7
11	33.7	45.0
12	26.9	41.7
13	21.1	34.0
14	19.6	27.7
15	14.9	21.8
16	11.8	20.0
17	10.7	15.6
All Ages	**36.6**	**49.9**

Conclusions:

- The prevalence of dental caries in U.S. schoolchildren has continued to decline.
- The rate of decline approximated that observed during the 1970's.
- The decline has taken place in all regions of the U.S.
- Almost half of U.S. children aged 5-17 are completely caries-free in their permanent dentition.
- Almost 2/3 of caries lesions involve the occlusal surfaces.
- Interproximal caries is approaching eradication.